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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,070	09/27/2005	Richard D. A. Heal	05-783	6312
20306 7590 03/26/2009 MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP 300 S. WACKER DRIVE 32ND FLOOR CHICAGO, IL 60606				
EXAMINER				
SIMS, JASON M				
ART UNIT		PAPER NUMBER		
1631				
MAIL DATE		DELIVERY MODE		
03/26/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/551,070

**Applicant(s)**

HEAL ET AL.

**Examiner**

JASON M. SIMS

**Art Unit**

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 1,2,10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date 1/23/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's election with traverse of Group II, claims 3-9, in the reply filed on 1/5/2009 is acknowledged. The traversal is on the ground(s) that the examiner incorrectly identified the common special technical features. This is not found persuasive because as applicant points out according to applicant, the claimed special technical features being, deriving features from an electrical output, dimensions being equal to number of features and a vector quantity having the number of dimensions, which are all taught as described below. Therefore, the special technical feature being taught shows the invention claimed in a generic or linking claim lacks novelty or is clearly obvious, leaving two or more claims joined thereby without a common inventive concept.

The requirement is still deemed proper and is therefore made **FINAL**.

Claims 1-2 and 10-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventive group, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 1/5/2009.

Claims 3-9 are the current claims hereby under examination.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 1/23/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement been considered by the examiner. However, it is noted that the Mentzer

reference listed as having document number 2001/049689, is being treated as having the document number 2001/0049689, wherein the inventor name and dates are aligned with the reference listed on the IDS. Additionally, the Bondarenko et al. reference listed as document number 2002/165674, is being treated as having the document number 2001/0165674, wherein the inventor name and dates are aligned with the reference listed on the IDS. With regards to consideration, the two references are what are being interpreted as the "correct" references and have been considered. If applicant intended a different reference to be considered, an additional IDS should be filed wherein additional references being submitted will be considered in the next office action as of the new date of filing an IDS.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borkholder (US P/N 6,377,057).

The claims are directed to a compound analysis system, the system comprising a micro-electrode array provided by a bio-compatible substrate having a plurality of electrodes situated thereon, said electrodes having an arrangement on said substrate corresponding substantially to that of an electrically active cellular network disposable in use thereon, a multi-channel amplifier coupled to said electrodes and an analyzer operatively connected to said amplifier to determine for each active channel a vector quantity having a number of dimensions equal to a number of features derived from the electrical output of said electrically active cellular network with each component of said vector being representative of a change in said feature, an apparatus, and a sensor.

Borkholder at Figs. 1-6 teach a compound analysis system, apparatus, sensor, and micro-electrode array as in claims 3-9. Borkholder at col. 1, lines 13-15 teach that using a cellular network cultured on electrode arrays is a well known technique in the arts. Borkholder at col. 2, lines 20-68 teaches studying different compounds and classifying the compounds and extracting features for classification of compounds using whole cell based biosensors. Borkholder at col. 3, teaches an apparatus having a processor being operable in response to signals derived from a micro-electrode array, a storage device and a sensor for compound detection.

Borkholder suggests, but does not explicitly teach for each active channel a vector quantity having a number of dimensions equal to a number of features derived

from the electrical output of said electrically active cellular network with each component of said vector being representative of a change in a said feature.

Borkholder suggests this because Borkholder teaches at col. 3, lines 1-14, that the changes in electrical potential or ionic current are recorded and the data used to determine the spectral changes are generated, which are then used for latter classification and the pattern responses are stored. Furthermore, Borkholder at col. 4, lines 6-20 teaches that a pattern of spectral changes, wherein the changes correlate with the effect on the channels of the responding cells. Therefore it is implied that the response pattern, i.e. vector quantity dimensions, correlates with the number of features derived.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to have stored a vector quantity of dimensions equal to the number of features derived from the electrical output for use in the analysis system as taught by Borkholder. This is because Borkholder teaches a system that stores the features derived from the electrical output, wherein each feature derived would have the designated storage space for being recorded as it is part of the routine programming and usage of a computer system to store the data being generated. Therefore, the differences between the claimed invention and the prior art were encompassed in known variations or in a principal known in the prior art.

### ***Conclusion***

No claim is allowed.

Art Unit: 1631

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Sims, whose telephone number is (571)-272-7540.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marjorie Moran can be reached via telephone (571)-272-0720.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the Central PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The Central PTO Fax Center number is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

// Jason Sims //

/Michael Borin/  
Primary Examiner, Art Unit 1631